

L 05060-67 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWP(h)/EWP(l) IJP(c) TCH/EM

ACC NR:AM6014211

Monograph

UR/  
63  
60  
B+1

Gusev, Boris Konstantinovich; Dokin, Vladimir Filippovich

Principles of aviation<sup>1</sup> (Osnovy aviatsii) Moscow, Izd-vo "Transport",  
1966. 158 p. illus., biblio. 9000 copies printed. Textbook for civil  
aviation special service schools.

TOPIC TAGS: education, civil aviation, aerodynamics, aircraft, aircraft,  
maintenance, aircraft engine, helicopter

PURPOSE AND COVERAGE: This textbook is intended for corresponding and  
attending students in the special service schools. It may also be  
used by the technical personnel of special services in Civil Avia-  
tion. This book is written for a course entitled "Principles of Avia-  
tion" which is offered by special-service training schools of the USSR Ministry  
of Civil Aviation. Given in the book are the basic aerodynamic principles  
of aircraft and helicopters, types of flying, the design features of  
various aircraft and their engines, and the organizational principles  
of the aircraft-engineering service. Fundamentals in engineering  
maintenance of aircraft and engines in civil aviation are presented.

Card 1/2

UDC 629.130.1(075.3)

L 05060-67

ACC NR: AM6014211

3

TABLES OF CONTENTS [abridged]:

Ch. I. From the history of USSR civil aviation -- 3

Ch. II. Fundamentals of aerodynamics -- 13

Ch. III. Principal <sup>24</sup>parts of aircraft and helicopters, and their  
function -- 53

Ch. IV. Introduction to theory and design of aircraft engines <sup>96</sup> -- 100

Ch. V. The flight of an aircraft -- 128

Ch. VI. Organizational principles in the aircraft-engineering service  
and the engineering maintenance <sup>14</sup> of aircraft and helicopters in civil  
aviation -- 153

References -- 159

SUB CODE: 01, 05/ SUBM DATE: 10Jan66/ ORIG REF: 012/

Card 2/2 <sup>pla</sup>

GUSEV, B. D.

✓ 3512. REVERSAL OF WATER CIRCULATION IN STEAM GENERATORS. Michan, S. I., Peterson, D. F. and Gusev, B. D. (Energomashinostroenie (Pr. Mach., Leningrad), July 1956, 7-12). The results of experimental investigation of the conditions of water circulation reversal in the rising tubes of a boiler, carried out on a test stand, are presented. Measurements of wall temperature of the vertical and inclined tubes under these conditions are discussed.

BYCHKOV, Dmitriy Vasil'yevich, prof., doktor tekhn.nauk; ELKYN, Georgiy Konstantinovich, prof.; AFANAS'YEV, Aleksandr Milent'yevich, dotsent, kand.tekhn.nauk; LOKKENBERG, Lidiya Konstantinovna, dotsent; PORTAYEV, Lev Petrovich, kand.tekhn.nauk; CHELBAYEVA, Yevgeniya Mikhaylovna, assistant; GUSEV, Boris Mikhaylovich, aspirant; SMIRNOV, A.F., prof.; VILKOV, G.N., red.izd-va; GILENSON, P.G., tekhn.red.

[Guide to practical studies in structural mechanics] Rukovodstvo k prakticheskim zaniatiyam po stroitel'noi mekhanike. Pod obshchei red. D.V.Bychkova. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1959. 327 p. (MIRA 12:10)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Smirnov). (Structures, Theory of)

BYCHKOV, Dmitriy Vasil'yevich, prof.dokt.tekhn.nauk; KLEYN, Georgiy Konstantinovich, prof.; FEDULOVA-LOKKENBERG, Lidiya Konstantinovna, dots.; PORTAYEV, Lev Petrovich, dots.; OSTROMENTSKIY, Yuriy Tsezarevich, kand. tekhn. nauk; CHELBAYEVA, Yevgeniya Mikhaylovna, assistant; GUSEV, Boris Mikhaylovich, inzh.; VILKOV, G.N., red. izd-va; TEMKINA, I.S., ~~tekhn. red.~~

[Manual for practical work in the theory of structures] Rukovodstvo k prakticheskim zaniatiyam po stroitel'noi mekhanike. Izd.2., ispr. i dop. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt., i stroit. materialam, 1961. 326 p. (MIRA 14:9)

(Structures, Theory of --Study and teaching)

GUSEV, B.M., inzh.

Design of thin-walled cylindrical units resistant to axial compression  
and bending. Khim.mash. no.3:21-23 My-Je '61. (MIRA 14:5)  
(Chemical engineering--Equipment and supplies)

905. CONCENTRATION OF COAL. Guesy, B. N. (U.S.S.R. Pat., 66,378/1946; Chem. Abstr., 1947, A, 2228).

Coal is separated from mineral matter by an upward-flowing clay suspension.

*GUSEV, B.P.*  
NAZAROV, I.N.; GUSEV, B.P.; GUNAR, V.I.

Complete synthesis of isopropenoid alcohols. Izv. AN SSSR Otd.  
khim. nauk no.10:1267-1270 0 '57. (MIRA 11:3)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.  
(Alcohols)



GUSEV, B. P.

20-2-27/60

AUTHORS: Nazarov, I. N. , Member of the Academy, Yanovskaya, L. A. ,  
Gusev, B. P. , Yufit, S. S. , Gunar, V. I., Smit, V. A.

TITLE: The Synthesis of Methylheptenone and Methylheptadienone  
(Sintez metilgeptenona i metilgeptadiyenona)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp. 331-334  
(USSR)

ABSTRACT: The two substances mentioned in the title of the paper under review are of importance for the synthesis of the natural scenting substances of the isoprenoid type. The authors of the present paper investigated the production of the former on basis dimethylvinylcarbinol or isoprene with the aid of three different methods : (1) by condensation of prenylhalogenids by aceto-ethylacetate; (2) by interaction between dimethylvinylcarbinol and the same ether; and (3) by pyrolysis of the same ether of dimethylvinylcarbinol. As was shown in a previously published scientific paper originating in the same laboratory, there are produced at influence by hydrogen halides on dimethylvinylcarbinol corresponding prenylhalides

Card 1/4

20-2-27/60

## The Synthesis of Methylheptanone and Methylheptadienone

with high yields. They can be easily condensed by sodium-aceto-ethylacetate and at a subsequent saponification they yield methylheptenone. The second method of synthesis takes place at a temperature of 160 - 170° and yields 60 - 70 % methylheptenone in addition to an almost theoretical amount of ethanol and CO<sub>2</sub>. The reaction must be carried out under pressure or by using high-boiling Vaseline oil. The remainder after distillation is aceto-ethylacetate of dimethylvinylcarbinol. At 160 - 170° this is subjected to a pyrolysis, and here methylheptenone and CO<sub>2</sub> are produced. This supports the reactions mechanism as illustrated in the paper under review. The pyrolysis of pure dimethylvinylcarbinol-acetate was investigated further. It is produced with a yield of 90 %, when diketone affects dimethylvinylcarbinol in presence of small amounts of pyridine, best at a temperature between 145 and 160°. During this process, methylheptenone is produced (65 - 70 %). The pyrolysis has also a lateral direction and leads to isoprene, acetone and CO<sub>2</sub>. Sometimes this lateral direction predominates. The authors of the present paper studied in detail the production methods of methylheptadienone both by interaction between dimethylethynylcar-

Card 2/4

20-2-27/60

The Synthesis of Methylheptenone and Methylheptadienone

binol and aceto-ethylacetate, and also by pyrolysis of pure dimethylethynylcarbinol-acetoacetate with a yield of 90 % by influence of diketone on pure dimethylethynyl in presence of triethylamine. The reaction takes place only at  $170 - 180^{\circ}$ . Below  $160^{\circ}$  the initial products are obtained again, because no interaction takes place. In the gaseous phase the reaction takes place only at  $250-300^{\circ}$ . There the yield is low (15-20 %). Inert diluting agents, acids, salts and metallic oxides do not favor the reaction, but rather frequently lead to a complete resinification of the substance. Here again lateral processes take place, with isopropenylacetylene and acetone being produced. The experimental part of the paper under review contains a detailed description of the production methods together with constants and yields. There are 5 references, 1 of which is Soviet.

Card 3/4

20-2-27/60

The Synthesis of Methylheptenone and Methylheptadienone

ASSOCIATION: Institute of Organic Chemistry imeni N. D. Zelinskiy, AS  
USSR  
(Institut organicheskoy khimii im. N. D. Zelinskogo Akademii  
nauk SSSR)

SUBMITTED: January 7, 1957

AVAILABLE: Library of Congress

Card 4/4

**AUTHORS:** Nazarov, I. N. Member, Academy of Sciences, 20-114-4-32/63  
USSR, Gusev, B. P., Makin, S. M., Mochalin, V. B., Nazarova,  
I. I., Vinogradov, V. P., Kruptsov, B. K., Shavrygina, O. A.,  
Nazarova, D. V.

**TITLE:** The Condensation of Acetylene With Methylheptanone and Its  
Analogues (Kondensatsiya atsetilena s metilheptanonom i yego  
analogami) The Synthesis of Linalool and Its Analogues (Sintez  
linaloola i yego analogov)

**PERIODICAL:** Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 796-799  
(USSR)

**ABSTRACT:** Several years ago a simple method of synthesis of different  
acetylene alcohols was worked out in the laboratory of the  
authors by means of condensation of aldehydes and ketones un-  
der the influence of powdery caustic potash with acetylene at  
high pressure (5-10 at superpressure). It was of interest to  
employ this method in the condensation of acetylene with methyl-  
heptanone and similar ketones, in order to obtain the correspond-  
ing acetylenealcohols. Linalool and some analogues may then be  
obtained easily by partial hydrogenation with a Pd-catalyst.  
Hitherto such condensations have usually been carried out under  
the influence of metallic sodium in a solution of liquid ammonia.

Card 1/4

The Condensation of Acetylene With Methylheptanone and Its Analogues. The Synthesis of Linalool and Its Analogues 20-114-4-32/63

It was found that methylheptanone and its various analogues may be condensed very easily with caustic potash and acetylene at the above-mentioned pressure. At 0-20°C they give as a result the corresponding tertiary acetylene alcohols with an almost quantitative yield (more than 90%). This reaction may also be carried out without acetylene pressure, however, somewhat more slowly and with a yield of only 60-80%. It has been previously shown in the same laboratory that acetylene alcohols which contain a non-substituted acetylene hydrogen may be hydrated highly selectively in the presence of palladium over calcium carbonate or copper coated zinc powder. Thereby vinylalcohols with an almost theoretical yield are obtained. The acetylene alcohols may not be selectively hydrated with other catalysts (Ni, Pt) and are therefore useless in the production of pure vinyl alcohols. An analogous picture may also be noticed with the hydrogenation of the above-described acetylene alcohols which are obtained by condensation of acetylene with methylheptanone and its analogues. These acetylene alcohols may also be highly selectively hydrated in the presence of a Pd-catalyst. They form linalool and its analogues

Card 2/4

The Condensation of Acetylene With Methylheptanone and Its Analogues. The Synthesis of Linalool and Its Analogues 2a-114-4-32/63

with an almost theoretical yield. The purity control of the vinylalcohols (linalool and its analogues) was carried out by means of the acetylene test (with ammonia solution of silver or copper oxide), whose sensitiveness was determined by special tests and amounted to 0,2-0,3%. At the hydrogenation of the acetylene alcohols with a Pd-catalyst the acetylene test always disappears at the theoretical point, that is, as only one hydrogen molecule is strongly attached. The acetylene alcohols obtained in the course of this work are summarized in table 1. Linalool and its analogues (table 2) were obtained by a partial hydrogenation of the above-mentioned acetylene alcohols with Pd-catalysts. In the experimental part the methods and yields of the said substances are described in detail. There are 2 tables and 5 references, 3 of which are Soviet.

ASSOCIATION: Institute for Organic Chemistry imeni N.D. Zelinskiy of the AN USSR and Moscow Institute for Refined Chemical Technology imeni M.V. Lomonosov (Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR i Moskovskiy institut tonkoy khimicheskoy

Card 3/4

The Condensation of Acetylene With Methylheptanone and Its Analogues. The Synthesis of Linalool and Its Analogues 2. 114-4-32/63

key tekhnologii im. M.V. Lomonosova)

SUBMITTED: March 12, 1957

Card 4/4



GUSEV, B. P.

20-5-31/60

**AUTHOR**

HAZAROV, I.N., member of the Academy,  
YANOVSKAYA, L.A., GUSEV, B.P., MAKIN, S.M. and  
HAZAROVA, I.I.

**TITLE**

The Synthesis of Geranylacetone, 3-Methylgeranylacetone,  
Pseudoionon and Pseudoiron.

**PERIODICAL**

(Sintez geranilatsetona, 3-metilgeranilatsetona,  
psevdiionona i psevdirona.- Russian)  
Doklady Akademii Nauk SSSR 1957, Vol 114 Nr 5,  
pp 1029-1032 (U.S.S.R.)

**ABSTRACT**

In the course of systematic work on the synthesis of  
isoprenoid compounds a paper by Carroll attracted the  
attention of the author. That author reports that with  
the heating of linalool with acetoacetic ether, in the  
presence of a small amount of sodium alcoholate, gerany-  
lacetone with a 40-45 % yield develops. Kimel and Cope  
obtained 61 % linalylacetoacetate from interaction of  
linalool with diketone, in the presence of metallic  
sodium. Its pyrolysis at 170-235 °C yielded 78 % gerany-  
lacetone. The authors thoroughly examined both synthesis  
varieties on linalool and 3-methyl linalool, in order to  
work out a production method for geranylacetone and  
3-methylgeranylacetone. It was found out that reaction  
proceeds best at 150-180°C without any catalysts.

CARD 1/4

20-5-31/60

The Synthesis of Geranylacetone, 3-Methylgeranylacetone, Pseudoionon and Pseudoiron.

90-95% of the theoretical  $\text{CO}_2$ -amount precipitate, and an almost theoretical amount of alcohol (with admixture of acetone) is distilled. Since the latter process is terminated considerably earlier than the  $\text{CO}_2$ -elimination, it may be assumed that the reaction passes the acetoacetate-stage. A system is given. This mechanism was proved by the authors for the reaction between dimethylvinylcarbinol and acetoacetic ether. From a study of the second variety of synthesis the authors found that the acylation of linalool and methylinalool with diketone may best be performed in the presence of pyridine or triethylamine, and not of metallic sodium. Based upon the results obtained, the authors decided to investigate both varieties in dehydrolinalool and 3-methyl dehydrolinalool, in order to work out synthesis methods for pseudoionon and pseudoiron. Sometime during the beginning of this work a paper by Lacey was published demonstrating the possibility of a synthesis of dienones on most simple ethinylcarbinols according to a general system mentioned here. The second half of the reaction the pyrolysis of acetoacetate, was performed by Lacey in the presence of small amounts of p-toluolsulfonic acid. This kind of dienone synthesis was thoroughly

CARD 2/4

20-5-31/60

The Synthesis of Geranylacetone, 3-Methylgeranylacetone, Pseudoionon and Pseudoiron.

studied in the laboratory of the authors. During the work the paper by Naves of the same topic was published. He also described a production method for 3-methylpseudoiron from 3-methyldehydrolinolool and  $\alpha$ -methyl acetoacetic ether. Recently Preobrazhenskiy and collaborators wrote on this topic. The authors studied both synthesis varieties and found that the reaction between dehydrolinolool or 3-methyl dehydrolinolool and acetoacetic ether proceeds best at 170-180° C. The yield of pseudoionon and pseudoiron amounts to about 55 %. The acylation of dehydrolinolool or 3-methyldehydrolinolool by diketone proceeds best in the presence of pyridine or triethylamine. The pyrolysis of the two mentioned substances thus obtained was performed at 185-195° C. In this connection about 80 % of the theoretical CO<sub>2</sub>-amount is obtained. The yield of pseudoionon and pseudoiron amounted to 50-55 %, of the initial materials. The cyclization of the thus obtained pseudoionon with a mixture of sulfur- and ice-acetic acid gave ionon

CARD 3/4

20-5-31/60

The Synthesis of Geranylacetone, 3-Methylgeranylacetone,  
Pseudoionon and Pseudoiron.

with a 65 % yield. Experimental part with the usual data.  
(2 Slavic references)

ASSOCIATION: "N.D. ZELINSKY" Institute for organic chemistry of the  
Academy of Sciences of the U-SSR.  
(Institut organicheskoy khimii im.N.D. Zelinskogo Akademii  
nauk SSSR)

PRESENTED BY: -

SUBMITTED: 7.2.57

AVAILABLE: Library of Congress.

CARD 4/4

GUSEV, B.P., Cand Chem Sci--(diss) "Complete synthesis of natural isoprenoid alcohols (linalool, geraniol and their homologues)." Moscow, 1958. 10 pp (Acad Sci USSR. Inst of Organic Chemistry in N.D. Zelinskiy), 110 copies (HL,22-58, 192)

-16-

504, 79-28-6-5/63

AUTHORS: Nazarov, I. N. (Deceased); Gusev, B. P., Gunar, V. I.

TITLE: Derivatives of Acetylene (Proizvodnyye atsetilena)  
193. A Complete Synthesis of the Isoprenoid Alcohols of  
Linalcol, Geraniol, Nerol, Nerolidol, Farnesol, Geranil-  
linalool, Geranilgeraniol and Phytol (193. Polnyy sintez  
izoprenoidnykh spirtov (linaloola, geraniola, nerola, nero-  
lidola, farnezola, geranillinaloola, geranilgeraniola i  
fitola))

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1444-1458  
(USSR)

ABSTRACT: As dimethylvinylcarbinol has become completely accessible as  
technical product the authors decided to investigate the  
complete methods of synthesis of isoprenoid alcohols on its  
basis, as well as on that of isoprene; for this purpose  
they repeated the mentioned reaction cycle several times  
(scheme 1). This way the isoprenoid chain is built in the  
way of successive combination reactions of ethinylation, of  
selective hydration, isomerization and acetylation, the

Card 1/3

307/79-28-6-5/63

Derivatives of Acetylene. 193. A Complete Synthesis of the Isoprenoid Alcohols of Linalool, Geraniol, Nerol, Nerolidol, Farnesol, Geranillinalool, Geranilgeraniol and Phytol

two latter reactions mostly being carried out in one stage without separation of the intermediate products. The whole course of this synthesis leading to the isoprenoid alcohols (of geranilgeraniol and phytol) was investigated in detail and represented by the mentioned schemes (see schemes for the synthesis of geraniol (V), farnesol (IX), geranilgeraniol (XIII) and phytol (XXV)). The accessibility of the initial products, the simplicity of its performance as well as the good yields at all stages of development of the explicitly described synthesis make it perfectly suited for the industrial production of linalools, geraniol, nerol, nerolidol, farnesol, geranillinalool, and geranilgeraniol, as these compounds are of great interest for the perfume industry and for the synthesis of some important natural compounds (vitamins, A, E, K, carotenoids, terpenes, etc.). Thus the authors for the first time carried out in detail a complete synthesis of the above mentioned isoprenoid alcohols as well as of the intermediate products of the synthesis (the ketones, and acetylene alcohols) by successive repeating of

Card 2/3

SOV/79-28-6-5/63

Derivatives of Acetylene. 195. A Complete Synthesis of the Isoprenoid Alcohols of Linalool, Geraniol, Nerol, Nerolidol, Farnesol, Geranillinalool, Geranilgeraniol and Phytol

the condensations of the ketones with acetylene, the selective hydration of the acetylene alcohols and of the conversion of tertiary vinylalcohols to isomeric primary alcohols of the allyl type as well as to unsaturated ketones of the allylacetone type. There are 24 references, 6 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR  
(Institute of Organic Chemistry, AS USSR)

SUBMITTED: June 28, 1957

1. Alcohols---Synthesis

Card 3/3



S/062/62/000/006/007/008  
B117/B101

AUTHORS: Gusev, B. P., and Kucherov, V. F.

TITLE: Chemistry of polyene and polyacetylene compounds. Communication 5. A general method of synthesizing diacetylene alcohols

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 6, 1962, 1062 - 1067

TEXT: The thermal cleavage of diacetylene glycols was studied in order to develop an easy method of pyrolysing them to diacetylene alcohols. Optimum conditions of this reaction were found for 2,7-dimethyl octadiene-3,5-diol-2,7, pure 2-methyl hexadiene-3,5-ol-2 being obtained with 55-65% yield by heating the glycol melt in a bath at 180-190°C in the presence of  $K_2CO_3$  (~5 % by weight) followed by accelerated distillation of pyrolysis products in vacuo. The pyrolysis of 3,8-dimethyl decadiene-4,6-diol-3,8 to 3-methyl heptadiene-4,6-ol-3, of 3,8-diethyl decadiene-4,6-diol-3,8, to 3-ethyl heptadiene-4,6-ol-3, and of di-(1-oxycyclopentyl)diacetylene and 1-oxycyclopentyl diacetylene, readily proceeds at 160-180°C yielding up to

Card 1/3

Chemistry of polyene ...

S/062/62/000/006/007/008  
B117/B101

60%. By reason of their ability to form Grignard complexes, diacetylene alcohols were used for the synthesis of hardly accessible, asymmetric diacetylene glycols. On the basis of 2-methyl hexadiin-3,5-ol-2 and that of corresponding ketones and aldehydes, the following asymmetric glycols were obtained with yields of up to 87%:  $(C_2H_5)_2(OH)C-DA-C(OH)(CH_3)_2$ , m. p. 73-74°C;  $(CH_3)_2C=CH-(CH_2)_2-C(CH_3)(OH)-DA-C(OH)(CH_3)_2$ , m. p. 60-61°C;  $(C_6H_5OH)C-DA-C(OH)(CH_3)_2$ , m. p. 120-121°C;  $(C_5H_4OH)C-DA-C(OH)(CH_3)_2$ , m. p. 113-119°C;  $(CH_3CHOH)C-DA-C(OH)(CH_3)_2$ , m. p. 76-77°C;  $(C_2H_5OH)C-DA-C(OH)(CH_3)_2$ , m. p. 43-44°C;  $(C_7H_7CHOH)C-DA-C(OH)(CH_3)_2$ , b. p. 118-120°C (0,5 mm Hg);  $(C_6H_5CHOH)-DA-C(OH)(CH_3)_2$ , m. p. 86-87°C. DA = diacetylene group  $-C\equiv C-C\equiv C-$ . Thermal decomposition of secondary-tertiary diacetylene glycols (by separation of acetone) take place in the presence of  $K_2CO_3$  at 130-150°C. Thus hexadiin-3,5-ol-2 (52.1%) and octadiin-1,3-ol-5 (63.2%) containing 5-10% 2-methyl hexadiin-3,5-ol-2 were got from 2-methyl octadiine-3,5-diol-2,7 and 2-methyl decadiine-3,5-diol-2,7. There is 1 table.

Card 2/3

Chemistry of polyene ...

S/062/62/000/006/007/008  
B117/B101

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii  
nauk SSSR (Institute of Organic Chemistry imeni N. D.  
Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: January 16, 1962

Card 3/3

S/062/62/000/006/008/008

B117/B101

AUTHORS: Gusev, B. P., and Kucherov, V. F.

TITLE: Chemistry of polyene and polyacetylene compounds. Communication 6. A new method of synthesizing diacetylene derivatives

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 6, 1962, 1067 - 1074

TEXT: Methods of synthesizing hardly accessible diacetylene compounds have been developed on the basis of 2-methyl hexadiin-3,5-ol-2 (I) and its derivatives as described in the previous communication (Izv. AN SSSR. Otd. khim. n. 1962, 1062). The OH group of I was protected from alkali influence by acetalation with vinyl ethyl ether. The Grignard complexes of this acetal (II) react readily with paraform or ethylene oxide to give compounds which are saponified by dilute hydrochloric acid and yield 6-methyl heptadiene-2,4-diol-1,6 (V) (90.5%) or 7-methyl octadiene-3,5-diol-1,7 (VI) (88.5%), respectively. Like diacetylene glycols, these compounds separate acetone at 150°C in the presence of  $K_2CO_3$ . Hexadiin-3,5-ol-1 (61.8%) b. p. 38-40°C/0.4 mm. Hg  $n_D^{20}$  1.5174 was thus obtained from VI. Tertiary diacety-  
Card 1/3

Chemistry of polyene and polyacetylene ...

S/062/62/000/006/008/008  
B117/B101

lene alcohols were synthesized from organometallic compounds of II:  
2-methyl heptadiin-3,5-ol-2 (70.5%); 2-methyl octadiin-3,5-ol-2 (73.5%)  
m. p. 8-9°C,  $n_D^{20}$  1.5054; 2-methyl decadiin-3,5-ol-2 (62.2%) b. p. 92-93°C per  
0.7 mm Hg,  $n_D^{20}$  1.5016. Thermal decomposition of 2-methyl decadiin-3,5-ol-  
2 in the presence of KOH formed octadiene-1,3 (69%), b. p. 46°C/22 mmHg,  
 $n_D^{20}$  1.4758. The reaction of octadiene-1,3 with carbonic acid and sub-  
sequent esterification yielded the methyl ester of octadiene-1,3-carboxylic  
acid (60%). II with carbonic acid gives the known 5-methyl-5-oxyhexadiene-  
1,3-carboxylic acid, and with orthoformate an acetal which was saponified  
to the diethyl acetal of 6-methyl-6-oxyheptadiin-2,4-al-1 (77.5%) b. p.  
95-96°C/0.3 mm Hg,  $n_D^{20}$  1.4932, an initial product for synthesizing diacety-  
lene polyene compounds. II with 2-methyl heptadiin-3,5-ol-2-acetate yield-  
ed diacetylene amine alcohols by Mannich's reaction: 1-(diethylamine)-6-  
methyl heptadiin-2,4-ol-6-acetate (71.3%) b. p. 93-95°C/0.03 mm Hg,  
 $n_D^{20}$  1.4936; 1-(morpholino)-6-methyl heptadiin-2,4-ol-6-acetate (77%) b. p.  
123-125°C/0.04 mm Hg; 1-(morpholino)-6-methyl heptadiin-2,4-ol-6 (54%) b. p.  
Card 2/3

S/062/62/000/006/008/008

Chemistry of polyene and polyacetylene ...

B117/B101

135-136°C/0.2 mm Hg; 1-(diethylamino)-6-methyl heptadiin-2,4-di-ol-6 (52.8%)  
b. p. 97-98°C/0.07 mm Hg,  $n_D^{20}$  1.5142. In the presence of KOH in catalytic  
amounts, the latter separated out acetone and gave 1-(diethylamino)-penta-  
diene-2,4 in yields of up to 70%. The other diacetylene amino alcohols  
react in the same manner. A study will be made of the possibilities for  
using the conversions here described to synthesize natural polyacetylene  
compounds and similar substances.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii  
nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelins-  
kiy of the Academy of Sciences USSR)

SUBMITTED: January 16, 1962

Card 3/3

GUSEV, B.P.; KUCHEROV, V.F.

Chemistry of polyene and polyacetylene compounds. Report No.9:  
Synthesis of capillene, capillin, and related compounds. Izv.  
AN SSSR.Otd.khim.nauk no.3:517-521 Mr '63. (MIRA 16:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.  
(Capillene) (Hexadiynophenone)

GUSEV, B.P.; KUCHEROV, V.F.

Character of alcohol addition to diacetylenic carbinols.

Izv. AN SSSR Ser. khim. no.7:1318-1319 J1 '64.

(MIRA 17:8)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.



POLOVIN, V.N.; KUDRYAVTSEV, V.S.; BAIYN', I.A.; KUCHEROV, V.V.;  
SAROLOVA, E.M.; KUCHEROV, V.F.; GUSEV, B.P.

Antibacterial activity of the synthetic derivatives of capillene  
(agropyrene) and capillin. (Antibiotiki 10 no.2:156-159 F '65.  
(MIRA 18:5)

1. Otdel khimioterapii (rav. - prof. A.M.Chernukh) Instituta  
farmakologii i khimioterapii AMN SSSR i laboratorii tekhnologii  
organicheskogo sinteza (rav. - prof. V.F.Kucherov) Instituta  
organicheskoy khimii AN SSSR, Moskva.

U 54447-62 EWT( )/EPF( )/EWP( )/EWA( ) Pg. 4/22 RPL JR/RM  
 UR/0062/65/000/004/0688/0692  
 547.362

ACCESSION NR: AP5012452

AUTHORS: Gusev, B. P.; Nazarova, I. I.; Kucherov, V. F.

TITLE: The chemistry of polyene and polyacetylene compounds. Communication 12.  
 Hydration of tertiary alcohols and glycols of the diacetylene series

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1965, 688-692

TOPIC TAGS: polyene, acetylene, alcohol, glycol, hydration, organic synthesis

ABSTRACT: In studying thermal splitting of glycols of the diacetylene series, catalysed by bases, the authors found that heating 2,7-dimethyl-octadiene-3,5-diol-2,7 with an aqueous solution of dimethylamine leads to the formation of liquid reaction products having the composition  $C_7H_{10}O_2$  (with a yield up to 60%),

a product from splitting the acetone molecule and simultaneous combination with water. This product has the grouping of alpha,beta-unsaturated ketone and contains no acetylene group or exocyclic double bond. It must therefore have a cyclic structure with a dihydrofuran or dihydropyran ring. The structure of the product was studied by the reforming of diacetylene glycol, and it was found that glycol, under similar conditions, gives a product that also forms during the

Card 1/2

L 54447-65

ACCESSION NR: AP5012452

2

heating of indole with an aqueous solution of dimethylamine. This indicates that the product has a hydrofuran structure. It was discovered that diacetylene alcohol is completely decomposed when heated with dimethylamine, but that diacetylene glycol is not hydrated when heated in an aqueous potash solution. This means that the final stage of furan formation from diacetylene glycol is apparently the attachment of secondary amines by an acetylene bond, with subsequent splitting of the acetone molecule (and not the reverse). It is shown that when various diacetylene tertiary glycols are heated with dimethylamine, the corresponding furanones form. The same type of reaction also takes place readily with diacetylene alcohols that do not contain the acetylene ring. The hydration of the diacetylene system probably follows the same course. Orig. art. has: 5 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo, Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 28Apr63

ENCL: CO

SUB CODE: CO, CO

NO REF SOV: 002

OTHER: 003

Card 2/2

NAZAROVA, I.I.; GUSEV, B.P.; KUCHEROV, V.F.

Regularities in the addition of secondary amines to diacetylenic alcohols. Izv. AN SSSR. Ser. khim. no.4:729-731 '65. (MIRA 18:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

L 57782-65 EPF(c)/EWP(j)/EdA(c)/ENT(m) Pc-4/Tr-4 RPL HM/JM

ACCESSION NR: AP5015588

UR/0062/66/000/005/0843/0851  
547.362

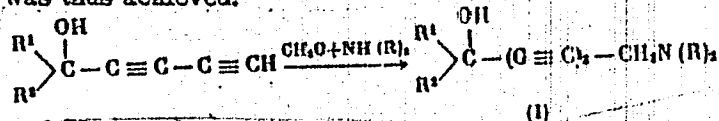
AUTHOR: Gusev, B.P.; Tatarchuk, V.V.; Azerbayev, I.N.; Kucherov, V.F.

TITLE: Chemistry of polyene and polyacetylene compounds. Report No. 13. Synthesis of dialkylamino derivatives of the diacetylene series

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 5, 1965, 846-851

TOPIC TAGS: polyunsaturated compound, amino alcohol, diamine, acetylene alcohol, diacetylene dialkylamine, Mannich reaction

ABSTRACT: Various types of dialkylamino derivatives of diacetylene were synthesized from diacetylenic alcohols by means of the Mannich reaction. A detailed study of the conditions of this reaction revealed that it can be carried out without masking the hydroxyl group by sufficiently diluting the reaction mixture with dioxane and using copper acetate as the catalyst. A one-step synthesis of diacetylenic amino alcohols of the general formula (I) was thus achieved:

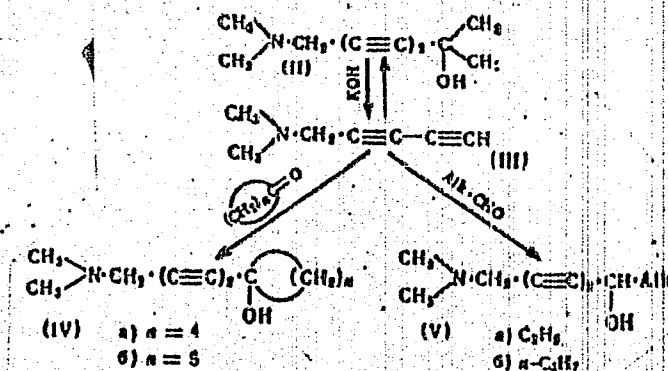


Card 1/3

L 57782-65

ACCESSION NR: AP5015588

Further reactions which produce tertiary and secondary diacetylenic amino alcohols were as follows:



Cont. 2/3

L 57782-65

ACCESSION NR: AP5015588

In addition, it was shown that diacetylenic amines of the type of (III) readily enter into a Mannich reaction and are convenient starting materials for the synthesis of certain unsymmetrical diacetylenic diamines, which were also synthesized. The procedures employed are described in detail. Orig. art. has: 3 tables and 3 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR  
(Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 28Apr63

ENCL: 00

SUB CODE: CC

NO REF SOV: 002

OTHER: 001

*bjp*  
Card 3/3

GUSEV, B.P.; KUCHEROV, V.F.

Chemistry of polyene and polyacetylene compounds. Report No. 14.  
Aldehyde acetals of the diacetylene series and their use in the  
synthesis of vinyl diacetylenic acids. Izv. AN SSSR. Ser. khim.  
no. 5: 851-855 '65. (MIRA 18:5)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.



*Journal of Management Studies*, 19(6), 701-718.

[illegible]

...the fact that the *in vitro* and *in vivo* results are in good agreement.

GUSEV, B.P.; EL'PERINA, Ye.A.; KUCHFROV, V.F.

Isomerization of alkyl diacetylenes. Izv. AN SSSR. Ser. khim.  
no.9:1659-1660 '65. (MIRA 18:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

EL'PERINA, Ye.A.; GUSEV, B.P.; KUCHEROV, V.F.

Conversions of secondary diacetylenic alcohols as a result of  
alkaline isomerization. Izv. AN SSSR. Ser. khim. no. 12:2215-2216  
'65. (MIRA 18:12)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.  
Submitted April 14, 1965.

ACC NR: AP6025397

SOURCE CODE: UR/0062/66/000/007/1209/1213

AUTHOR: Gusev, B. P.; Tatarchuk, V. V.; Azerbayev, I. N.; Kucherov, V. F.

ORG: Institute of Organic Chemistry, Academy of Sciences, SSSR (Institut organicheskoy khimii im. N. D. Zelinskiy Akademii nauk SSSR)

TITLE: Chemistry of polyene and polyacetylene compounds. XVIII. Amines of the diacetylene series

SOURCE: AN SSSR. Izv. Ser khim, no. 7, 1966, 1209-1213

TOPIC TAGS: amine synthesis, diacetylenic amine, dialkylaminoacetamino-diacetylene, ACETYLENE, AMINE, POLYMER CHEMISTRY

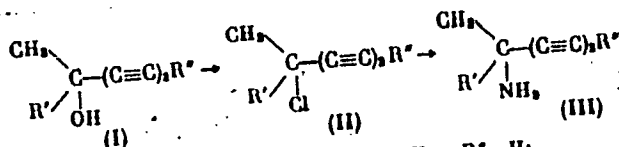
ABSTRACT:

Acetylenic amines are of interest because of their potential physiological activity. At room temperature in the presence of HCl and  $\text{CaCl}_2$ , tertiary diacetylenic alcohols (I) react with hydroquinone to form alkylchloro-diacetylenes (IIa, IIb, IIc, and IIId). Reactions of the latter with sodium amide at room temperature yielded the primary amines of diacetylene series (IIIa, IIIb, IIIc, and IIId):

UDC: 542.91+547.362

Card 1/4

ACC NR: AP6025997



- a)  $\text{R}'=\text{CH}_3$ ,  $\text{R}''=\text{H}$ ; b)  $\text{R}'=\text{C}_2\text{H}_5$ ,  $\text{R}''=\text{H}$ ;  
c)  $\text{R}'=\text{CH}_3$ ,  $\text{R}''=\text{C}_2\text{H}_5$ ; d)  $\text{R}'=\text{C}_2\text{H}_5$ ,  $\text{R}''=\text{C}_2\text{H}_5$

Composition and physical constants of the chlorodiacetylenes and amino-diacetylenes are given in the Table. N-Alkylation of IIIa with ethyl tosylate yielded the secondary amine VII, bp 46—47°C; alkylation of sodium derivative of IIIa with ethyl bromide at the terminal acetylene group in liquid ammonia yielded IIb; IIIa is also easily converted into

Card 2/4

ACC NR: AP6025397

Table 1.

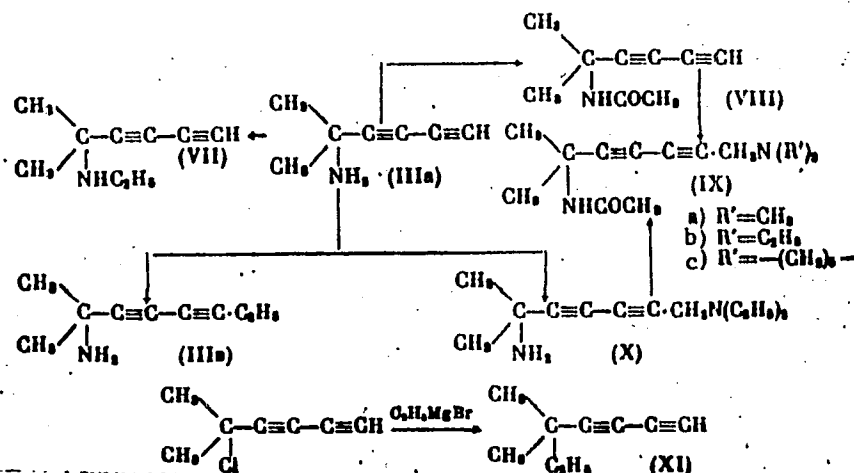
Formula	Yield %	mp., °C (p <sub>1</sub> mm Hg)	n <sub>D</sub> <sup>20</sup>	ν, cm <sup>-1</sup>	Found, %				Calculated, %			
					C	H	Cl	N	O	H	Cl	N
$\begin{array}{c} \text{CH}_3 \\   \\ \text{R} - \text{C} - \text{C} = \text{C} - \text{C} - \text{R}'' \\   \\ \text{NH}_2 \end{array} \quad (\text{II})$												
a) R' = CH <sub>3</sub> , R'' = H	91.1	29-30(8)	1.4976	2101, 2280	61.44	6.63	27.8	—	60.42	6.87	28.01	—
b) R' = C <sub>2</sub> H <sub>5</sub> , R'' = H	74.8	46-49(10)	1.5030		64.14	6.23	28.84	—	64.34	6.45	29.2	—
c) R' = CH <sub>3</sub> , R'' = C <sub>2</sub> H <sub>5</sub>	77.6	98-99(20)	1.5126		61.82	7.04	22.52	—	62.20	7.13	22.97	—
d) R' = C <sub>2</sub> H <sub>5</sub> , R'' = C <sub>2</sub> H <sub>5</sub>	40	78-80(0.9)	1.5218		73.14	8.78	18.06	—	73.31	8.77	18.02	—
$\begin{array}{c} \text{CH}_3 \\   \\ \text{R} - \text{C} - \text{C} = \text{C} - \text{C} - \text{R}'' \\   \\ \text{NH}_2 \end{array} \quad (\text{III})$												
a) R' = CH <sub>3</sub> , R'' = H	54.1	45-46(7)	1.4964	2086, 2250	78.14	8.72	—	—	13.46	78.46	8.60	—
b) R' = C <sub>2</sub> H <sub>5</sub> , R'' = H	46.4	mp. 16-18	1.5148		79.01	9.24	—	—	11.38	79.29	9.15	—
c) R' = CH <sub>3</sub> , R'' = C <sub>2</sub> H <sub>5</sub>	41.8	52-53(7)	1.5148		79.84	9.01	—	—	10.28	79.02	9.69	—
d) R' = C <sub>2</sub> H <sub>5</sub> , R'' = C <sub>2</sub> H <sub>5</sub>	40.9	76-78(7)	1.5232	2136, 2132, 2248	81.16	10.68	—	—	7.94	81.30	10.80	—

VIII, which was used in the Mannich reaction to obtain 1-dialkylamino-6-acetylamino-6-methyl-2, 4-heptadiynes, e.g., IXa. The reaction of IIa

Card 3/4

ACC NR: AP6025397

with ethylmagnesium bromide yielded 5,5-dimethyl-1,3-heptadiyne (XI),  
bp 53—54°C (40 mm),  $n_D^{20}$  1.4888:



Orig. art. has: 1 table.

[W.A. 50; CBE No. 10]

SUB CODE: 07/ SUBM DATE: 20Jan64/ ORIG REF: 002/ OTH REF: 006

Card 4/4

L 56078-65 EWT(1)/EWT(m)/EWA(d)/EWP(t)/EEC(b)-2/EWP(z)/EWP(b) Pad EWP(c)  
 ACCESSION NR: AP5013897 JD/RW/JG UR/0126/65/019/005/0660/0666  
 539.292 : 539.01

AUTHOR: Voloshinskiy, A. N.; Gusev, B. S.

TITLE: Theory of Kerr and Faraday effects in ferromagnetic alloys

SOURCE: Fizika metallov i metallovedeniye, v. 19, no. 5, 1965, 660-666

TOPIC TAGS: Kerr effect, Faraday effect, anomalous Hall effect, effective magnetic field, spin orbital interaction, electron scattering, conduction electron, ferromagnetic alloy

ABSTRACT: A recent spate of studies of the anomalous Hall effect in ferromagnetic metals has shown by direct calculations that generally the effect of spin-orbital interaction on the scattering of conduction electrons cannot be described by means of the effective magnetic field. For example, the effect of this interaction on electron-phonon collisions cannot be described by introducing some internal magnetic field. These features of the incorporation of spin-orbital interaction in various mechanisms of the scattering of conduction electrons affect markedly the frequency relations of the Kerr and Faraday effects in the infrared portion of the spectrum (2 to 30  $\mu$ ).

Card 1/4



L 56078-65

ACCESSION NR: AP5013807

Therefore, investigating the variance of the Kerr and Faraday effects in this portion of the spectrum may assist greatly in determining the principal mechanism of the influence of spin-orbital interaction in both magneto-optical effects and the anomalous Hall effect. From this standpoint, the influence of spin-orbital interaction on the scattering of conduction electrons in ferromagnetic metals by impurities is of special interest. Accordingly, the authors calculated the frequency dependence of the mean-velocity component of conduction electrons perpendicular to the electrical field of the light wave. This component is proportional to the nondiagonal part of the tensor of light admittance, which determines the variance of the Kerr and Faraday effects. A pair of kinetic equations of the scattering of conduction electrons by impurities is derived and subsequently their solutions are simplified. The effect of spin-orbital interaction on conduction electrons is thus found to differ in two cases: in one case, where the diagonal part of the density matrix alone suffices to find the mean velocity of conduction electrons, spin-orbital interaction can be described by introducing some effective homogeneous permanent magnetic field. In the other case, the calculation of mean velocity must take into account the nondiagonal part of the density matrix, and spin-orbital interaction

Card 2/4

L 56078-65

ACCESSION NR: AP5013807

cannot be described by introducing some effective magnetic field. This leads to a qualitative change in the frequency dependence of the Hall mean-velocity component of conduction electrons. The corresponding change in the variance of the Kerr and Faraday magneto-optical effects can be calculated from three formulas provided by the author and is experimentally observable from the nature of this variance in the infrared portion of the spectrum. To this end, it appears expedient to compare the variance of magneto-optical effects for certain alloys of nickel and alloys of iron with vanadium (small concentration of vanadium). Since the dependence of the anomalous Hall effect constant on the electrical resistance due to the presence of impurities in ferromagnetic metals is nearly linear for a number of nickel alloys and nearly quadratic for iron-vanadium alloys, the frequency dependence of the nondiagonal components of the tensor of light admittance should be correspondingly calculated from different formulas. The variance of the Kerr and Faraday effects should correspondingly differ. Experimental studies of this kind would greatly assist in further elucidation of the nature of the anomalous Hall effect as well as of the Kerr and Faraday effects. "In conclusion, I wish to express my sincere gratitude to Ye. A. Turov and M.M. Noskov for their valuable comments made while discussing this

Card 3/4

L 56078-65

ACCESSION NR: AP5013807

project." Orig. art. has: 41 formulas.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals AN SSSR)

SUBMITTED: 22Jul64

ENCL: 00

SUB CODE: EM, MI

NO REF SOV: 006

OTHER: 003

*Bab*  
Card 4/4

TEBENIKHIN, Ye.F., Kandid. Khim. nauk. ~~Dr. Sc.~~ USSR, L.P., 1948.

Effect of a magnetic field on the emission of calcium carbonate.  
Prom. energ. 18 no.11:26-31 N '63. (MIRA 16:12)

GUSEV, B.V.

Age of alkali-ultrabasic rocks in the Maymecha-Kotuy region based  
on the studies of their residual magnetism. Inform.biul.NIIGA  
no.14:30-33 '59. (MIRA 13:7)  
(Maymecha Valley--Rocks, Igneous--Magnetic properties)

S/169/62/000/005/087/093  
D228/D307

AUTHOR: Gusev, B. V.

TITLE: Paleomagnetic data about the age interrelations of  
dolerites and alkali-ultrabasic rocks in the vicinity  
of the lower course of the R. Kotuy

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1962, 29, ab-  
stract 5G211 (Inform. byul. In-ta geol. Arktiki, no. 24,  
1961, 42-44)

TEXT: The results are given for paleomagnetic investigations of  
dolerite and olivinite specimens, collected from sills and dykes  
developed near the location of the alkaline-ultrabasic massif of  
Odikjinchu in the north of the Siberian Platform. The magnitude  
and the direction of the  $I_n$  vector of 43 olivinite and 87 dolerite  
samples were determined; they appeared to be stable. The magnetic  
characteristics of the specimens are cited together with the coor-  
dinates of the north geomagnetic pole in the period of rock forma-  
tion. The satisfactory coincidence of the pole's coordinates after  
Card 1/2

Paleomagnetic data about ...

S/169/62/000/005/087/093  
D228/D507

the introduction of a correction for the sill's "straightening" allows the author to assume that the dolerite dykes and sills near the lower course of the R. Kotuy were formed before the ultrabasic rocks. According to geologic estimates the formation of the dolerites is attributed to the Permo-Triassic period. / Abstracter's note: Complete translation. /

Card 2/2

GUSEV, B.V.

Causes of reversal magnetic anomalies in the Maymecha-Kotuy  
region. Trudy NIIGA 132:35-52 '62. (MIRA 16:4)  
(Krasnoyarsk Territory--Magnetic anomalies)



MOCHALOV, V.A.; MATYUSHCHENKO, D.D.; KRIVITSKIY, A.A.; GLEZER, G.N.;  
OPARIN, I.M.; KHEYMAN, E.L.; SMETNEV, N.N.; EPSHTEYN, A.L.;  
GUSEV, B.Ya.; LEYKIN, L.P.; MARCHENKO, G.M.; FISHKOV, V.G.;  
SAPROVSKIY, S.V.; LYAKHOVSKIY, I.I.; SMELYAKOV, Ye.P.; VAYNTRAUB,  
D.A.; BUDYLIN, M.M.; NOTKIN, Ye.M.; KUR, G.Ye.; ARONSHTEYN, N.A.;  
SUKHAREV, V.I.; VINOGRADOV, K.N.; BOBROVSKIY, N.S.

Innovators' certificates and patents. Mashinostroenie no. 2:  
103-109 Mr-Ap '64. (MIRA 17:5)

1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 26

1967, U. YA. -- "LONGITUDINAL-CROSS LONGITUDINAL-FIELD MAGNETRON," *Usp. Fiz. Nauk*, 1967, Vol. 10, No. 1, p. 157 (English transl. in *Phys. Usp.*, 1967, Vol. 10, No. 1, p. 157).

NO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1972

GORYAINOV, F.A., dotsent, kandidat tekhnicheskikh nauk; GUSEV, B.Ya.,  
kandidat tekhnicheskikh nauk

Investigation of the two-stage longitudinal-field rotating amplifier. Trudy MEI no.15:55-66 '55. (MLRA 8:11)

1. Kafedra elektricheskikh mashin Moskovskogo ordena Lenina energeticheskogo instituta imeni V.M.Molotova  
(Electric controllers)

БУСЭВ. Р. Я.  
BUSSEV, R. Y.

"A Two-Stage Longitudinal Field Amplidyne with Self-Excitation (BUS)," pp. 141-145, ill, 3 ref

Abst: The principle of operation and peculiarity of construction of two-stage amplidyne with self-exciting longitudinal field (BUS), which can find wide application as a turbogenerator, hydrogenerator, and large DC generator exciter, is discussed. The analysis of operation of such amplidyne has shown that it can be built to any desired capacity.

SOURCE: Trudy Rybinskogo Radiotekhnicheskogo In-ta VVS SSSR (Works of the Rybinsk Radio Engineering Institute of the Ministry of Higher Education USSR) Volume 1, Moscow, 1956.

Sum 1854

GUSEV, B. Ya.

621.373.238.3  
✓ 555. SELF-EXCITING TWO-STAGE ELECTRODYNAMIC  
AMPLIFIER WITH IN-PHASE FIELD. F.A. Goryainov and  
B. Ya. Gusev.

Elektrichestvo, 1952, No. 8, 18-22. In Russian.

These amplifiers may be designed like normal d.c. machines with one, two or more stages. The amplification of a single-stage amplifier is 500-600, that of a self-exciting two-stage in-phase field type up to  $40-45 \times 10^4$ , while that of a three-stage machine can be as high as  $10^6$ . The latter type are, however, impracticable because of their complicated winding system. The two-stage machine consists of two cascaded d.c. generators combined in a single unit; the first generator represents the input stage and acts as exciter of the second "output" generator. The latter has a separately excited field winding and either a series or shunt self-excited winding. Theory and design are studied with special reference to high-speed amplifiers. Formulae for the time constants are derived.

B.F. Kraus

P.P.S.

BOV/110-59-3-5/25

AUTHOR: Gusev, B.Ya. Candidate of Technical Sciences

TITLE: The Influence of Saturation on the Operation of a  
Two-stage Direct Field Amplidyne (Vliyaniye  
nasyshtcheniya na raboty dvukhstupenchatogo  
elektromashinnogo usilitelya prodol'nogo polya)

PERIODICAL: Vestnik Elektromyashlennosti, 1959, Nr 3, pp 23-27 (USSR)

ABSTRACT: It is usually assumed that there is no saturation in the main flux path of an amplidyne, otherwise the different stages do not operate independently. Quite small saturation in the magnetisation curve of the amplidyne output stage and also local saturation caused by armature reaction in the first and second stages can seriously affect the operation of the amplidyne. Such saturation reduces the amplification factor and distorts the regulation characteristics of the amplidyne. The effects of saturation are considered in this article with reference to the amplidyne, the schematic circuit diagram of which is given in Fig.1. The influence of saturation and armature reaction on the operation of the second stage of the amplidyne is first considered.

Card 1/4

NOV/110-59-3-5/25

The Influence of Saturation on the Operation of a Two-stage  
Direct Field Amplidyne

Regulation curves are constructed with and without allowance for armature reaction. For this purpose, use is made of the experimentally determined no-load characteristic, Fig.2 - Curve 2. The theoretical and test results are given in Fig.3 in which curve 1 is the calculated characteristic without allowance for non-linearity of the no-load curve and armature reaction, curve 2 is the same with allowance for non-linearity of the no-load curve and for armature reaction, curve 3 allows for non-linearity of the characteristics but not for armature reaction and curve 4 is the experimental result. The influence of non-linearity of the no-load characteristic on the amplification factor is illustrated graphically in Fig.4. The results show that armature reaction has little effect on the output stage and may be neglected, non-linearity of the no-load curve is much more important. The influence of local saturation in the magnetic circuit on the operation of the first stage of the amplidyne is then considered. Such local saturation occurs as a result of the combined

Card 2/4

307/110-59-3-5/25

The Influence of Saturation on the Operation of a Two-stage  
Direct Field Amplidyne

influence of armature reaction and the main flux, by a mechanism which is explained with reference to Fig.5. This figure represents the distributions of currents in the armature winding. The field distortion that is observed under the poles is plotted diagrammatically in Fig.6. The methods of determining the currents and voltages in different parts of the amplidyne circuit are explained with reference to fig.7 and 8. Curves of the output current as function of the input current are given in fig.9, curve 1 without allowing for the equalising flux that is set up, curve 2 when the equalising flux is allowed for and curve 3 experimental data. It will be seen that there is good agreement between the last two curves. The tests were made on a model amplidyne based on a normal direct current machine of 1.65 kW, 1500 rpm, 100 V and 15 A, the main data of the machine are tabulated. It is concluded that in designing two stage direct field amplidynes the following considerations should be taken into account. The range of

Card 3/4



SOV/110-59-3-5/25

The Influence of Saturation on the Operation of a Two-stage  
Direct Field Amplidyne

operation of the amplidyne without a compensating winding for the main current should lie in a zone in which deviations of the no-load characteristics from the straight line do not exceed 5%. To avoid the influence of local saturation on the operation of the amplidyne it is advisable to use a distributed compensating winding to compensate for armature reaction due to the output stage current. There are 9 figures and 1 Soviet reference.

SUBMITTED: 16th July 1958

Card 4/4

SOV/110-59-7-13/19

AUTHORS: Gusev, B.Ya. (Candidate of Technical Sciences), and  
Maziya, L.V., (Engineer)

TITLE: An Investigation of Transient Processes in a Two-Stage  
Longitudinal-Field Amplidyne by Electronic Analogue  
Methods (Issledovaniye perekhodnykh protsessov v  
dvukhstupenchatom elektromashinnom usilitele prodol'nogo  
polya pri pomoshchi elektronnoy modeliruyushchey ustanovki)

PERIODICAL: Vestnik elektropromyshlennosti, 1959, Nr 7, pp 58-63 (USSR)

ABSTRACT: This article describes the use of an analogue computer to  
study the influence on the transient processes and  
amplification factor of a two-stage longitudinal field  
amplidyne of the following factors: the method of  
connecting the self-excitation windings, the adjustment  
of the self-excitation circuit, non-linearity of the  
magnetisation curve, compensation of armature reaction  
due to first stage currents, and compensation of armature  
reaction in the first stage. A type MN-8 computer was  
used, in which continuously-operating elements integrate  
differential equations. The differential equations of  
the amplidyne may be derived from its equivalent circuit.  
Fig 1a shows the equivalent circuit of a two-stage

Card 1/5

SOV/110-59.7.13/19

An Investigation of Transient Processes in a Two-stage Longitudinal-Field Amplidyne by Electronic Analogue Methods

amplidyne with series connection of the self-excitation windings on the assumption of complete compensation of armature reaction in the first and second stages, with no counteracting winding present and assuming a linear no-load curve. The transient process equations for this case are given and a block diagram of the computer set-up is given in Fig 2. Curves of the load current as function of time obtained in this way are seen in Fig 3. It is concluded that on a purely resistive load the amplidyne with the series self-excitation winding operates faster because the time-constant of the amplidyne is less when the series winding is used. With an inductive load, however, the series winding amplidyne is slower than the parallel-winding type because the increase in the main field of the former is governed by the increase in the load current. An amplidyne with series self-excitation winding operating on a purely resistive load was used to study the influence of the adjustment of the self-excitation circuit on the transient process, and the necessary equations for this case are derived. The

Card 2/5

SOV/110-59-7-13/19

An Investigation of Transient Processes in a Two-stage Longitudinal-Field Amplidyne by Electronic Analogue Methods

corresponding voltage/time curves are given in Fig 4; a factor  $k$  given by Eq (13) is introduced and the curves show that as this factor is increased the amplification factor of the amplidyne increases proportionately to  $k^2$ , whilst the transient process time is increased in proportion to the square root or cube root of  $k$ . The method of investigating the non-linearity of the no-load curve is explained and the curves obtained are plotted in Fig 5. In this figure, Curve 2 corresponds to a constant control voltage and Curve 1 is derived on the assumption that the no-load curve is linear. It will be seen that the non-linearity of the magnetisation curve reduces the amplification factor of the amplidyne and reduces the transient process time by a factor of 1.25. Equations are derived to investigate the influence of compensation of armature reaction. Load-current/time curves for various cases are plotted in Fig 6 and it is shown that the degree of compensation of the first stage armature reaction has little influence on the speed of the amplidyne but considerably affects its amplification

Card 3/5

SOV/110-59-7-13/19

An Investigation of Transient Processes in a Two-stage Longitudinal-Field Amplidyne by Electronic Analogue Methods

factor. The best adjustment of the first stage was found to be over-compensation on one axis and under-compensation on the other. The influence of the counter-acting windings was studied and the results are plotted in Fig 5, Curves 3 and 4. It is shown that the use of a counter-acting winding can considerably increase the amplification factor without affecting speed. In order to check the procedure, tests were made on a 45 kW amplidyne type EMU-550 manufactured by the Khar'kov Electro-Mechanical works. Technical data of the machine are appended. The test results are plotted as bold lines in Fig 7 and the calculated curves are shown dotted. Agreement is satisfactory. The work does not permit of final conclusions about the best way of connecting amplidyne windings. However, pending the study of other combinations of windings, certain conclusions can be drawn from the work. It is best to use parallel self-excitation windings because the operation is faster with a partially inductive load. The amplification factor is considerably influenced by adjustment of the self-

Card 4/5

SOV/110-59-7-13/19

An Investigation of Transient Processes in a Two-stage Longitudinal-Field Amplidyne by Electronic Analogue Methods

excitation circuit. If the speed of rotation of the amplidyne varies widely, a longitudinal-field amplidyne should not be used. Non-linearity of the magnetisation curve has little influence over the working range of the amplidyne.

There are 8 figures, 1 table and 4 Soviet references.

Card 5/5

GUSEV, D., inzhener; KHARASH, M., inzhener.

~~Device for cutting glass pipes.~~ Stroitel' no.2:11 P '57.

(MLRA 10:3)

(Pipe, Glass) (Glass cutting)

GUSEV, D.

On the "Sergievskii" State Farm. Sel'. stroi. 12 no.10:12 0 '57.  
(MLRA 10:11)

1. Direktor sovkhoza "Sergiyevskiy" Moskovskoy oblasti.  
(Moscow Province--Construction industry)  
(Collective farms)



GUSEV, D.

Installing water-supply systems. Sel'.stroï. 15 no.7:  
5-7 J1 '60. (MIRA 13:8)

1. Glavnyy inzhener Tambovskoy burovoy kontory.  
(Tambov Province--Water supply, Rural)

TORPANOVA, G.A.; Prinimali uchastiye: BEYLINA, TS.O., inzh.; GUSEV, D.K.,  
inzh.

Bessemer manganese steel with zirconium. Sbor.trud.TSNIICHM  
no.27:26-28 '62. (MIRA 15:8)

1. Gosudarstvennyy proyektno-konstruktorskiy i eksperimental'nyy  
institut ugol'nogo mashinostroyeniya.  
(Manganese steel--Metallurgy)

TRUSS, T. M.

Armatures, Dynamos

Incorrect distribution of poles in the end winding of a generator. Elek. sta. 23

no. 3, '52

INZN.

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.



GUSEV, D.N.

The 2A450-type jig-boring machine. Biul. tekhn.-ekon. inform. no.10:  
22-24 '59. (MIRA 13:3)

(Drilling and boring machinery)

GUSEV, D.N.

Innovators increase the strength of cutting tools. Mashinostroitel'  
no.2:21,24 F '65. (MIRA 18:3)

L 09900-67 EWT(m)/EWP(t)/ETI IJP(c) GG/JW/JD

ACC NR: AP6033564

SOURCE CODE: UR/0181/66/008/010/3019/3021

34

AUTHOR: Berzina, I. G.; Gusev, E. B.; Shaskol'skaya, M. P.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov);  
All-Union Scientific Research Institute of Nuclear Geophysics and Geochemistry,  
Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i  
geokhimi)

TITLE: Effect of annealing on the mobility of dislocations in irradiated LiF

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3019-3021

TOPIC TAGS: lithium fluoride, annealing, etched crystal, crystal dislocation, crystal lattice dislocation, isothermal annealing, color center, dislocation mobility, etch figure, etch figure star

ABSTRACT: The effect of various color centers on the dislocation mobility and the structure of the etch figure star of the lithium fluoride crystal face (100) is investigated. The restoration of the structure and size of the etch figure star during the process of isothermal annealing was found to be divided into three stages, which correspond to the elimination of different types of defects, and

Card 1/2

L 09900-67

ACC NR: AP6033564

restoration time was found to depend on the amount of irradiation. [Authors' abstract]

SUB CODE: 20/ SUBM DATE: 13Oct66/ ORIG REF: 003/ OTH REF: 002/



GUSEV, E.K.; MITROFANOV, I.A.

Flow-through capacity and delivery of a gas pipeline. Gaz.  
delo no.11:16-18 '64. (MIRA 18:2)

1. Leningradskoye upravleniye magistral'nykh gazoprovodov.

KILNSO, A., YEVDOKIMOV, D., KIRPALOVA, T.,  
BRYNTSEV, P., GUSEV, F., MIKOLAYEVSKIY, YU.,  
KAZANSKIY, N., BOKATIN, V.,

Foresters

Foremost forester of the country. Les i step' 14 No. 5 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclassified.

FRIDMAN, Ye.G.; GUSEV, F.F.

New data on the function of a resected stomach. Vest. rent. 1  
rad. 40 no.1:30-33 Ja-F '65. (MIRA 18:6)

1. Radiologicheskiy otdel (zav.- prof. I.L. Tager) Instituta  
eksperimental'noy i klinicheskoy onkologii AMN SSSR i meditsinskaya  
sanitarnaya chast' No.12 Ministerstva zdravookhraneniya SSSR,  
Moskva.

GROMOVA, A., kand. biolog. nauk; VLADIMIRSKAYA, M., kand. sel'skokhoz. nauk;  
GUSEV, G., kand. biolog. nauk

Reviews and bibliography. Zashch. rast. ot vred. i bol. 10 no.6:61-62  
'65. (MIRA 18:7)

1. Brestskiy pedagogicheskiy institut (for Gromova). 2. Vsesoyuznyy  
nauchno-issledovatel'skiy institut zashchity rasteniy (for Vladimirskaia,  
Gusev).

GUSEV, G.

Flea beetles as potato pests. Zashch. rast. ot vred. 1  
bol. 10 no.8:51-52 '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zashchity  
rasteniy.

DEGTYAREV, V.V.; GUSEV, G.F.

Effect of the Bukhtarminsk reservoir on the hydrological  
conditions of the Irtysh River. Probl. gidroenerg. 1 vod.  
khoz. no.1:209-216 '63. (MIRA 16:12)

1. Irtyshskoye basseynovoye upravleniye puti.

GUSEV, F.F. (Moskva)

Isolated fractures at the site of attachment of the cruciate  
ligament to the knee joint. Khirurgiia no.9:36-41 '61. (MIRA 15:5)

(TIBIA--FRACTURE)

GUSEV, FEDOR IVANOVICH

DECEASED

d. 1908-1960

SEE ILC

CONSTRUCTION



GUSEV, F.M.

GUSEV, F.M.

Automatic grip for parts on the vertical lathe. Der. i lesokhin.  
prom. 3 no.7:23 J1 '54. (MLRA 7:7)

1. Shumerlinskiy mebel'nyy kombinat.  
(Lathes)

GUSEV, G. inzhener.

Exhibition on the mechanization of automobile maintenance and  
repair. Avt.transp.34 no.3:15-17 Mr '56. (MLRA 9:7)  
(Leningrad--Automobiles--Repairing)

ZUBOVSKIY, G.; GUSEV, G.

Assembling elevators and grain intake equipment from the water.

Muk-elev. prom. 24 no.6:22-25 Je '58.

(MIRA 11:7)

1. Vsesoyuznyy trest Spetselevatormel'stroy.  
(Grain elevators)

GUSEV, G.

This also concerns us, administrators.  
6 no.9:25 S '63.

Ochr. truda i sots. strakh.  
(MIRA 16:10)

1. Nachal'nik shakhty No.2 Gosudarstvennogo tresta predpriyatiy  
ugol'noy promyshlennosti Anzharskogo rayona kombinata Kuzbassugol',  
Kemerovskaya obl.

GUSEV, G.A.

[Directory of communication services] Spravochnik ob uslugakh  
sviazi. Moskva, Sviaz'izdat, 1961. 200 p. (MIRA 16:2)  
(Communication and traffic)

GRACHEV, I.V.; GUSEV, G.G.; ZAVEL'SKIY, D.Z.

Neutral form of diazo compounds. Zhur.ob.khim. 27 no.10:2820-2829  
O '57. (MIRA 11:4)

(Diazo compounds)

S/184/60/000/004/011/021

A109/A029

AUTHORS: Kagan, D.F., Candidate of Technical Sciences; Shapiro, G.I., Gus-  
ev, G.G.; - Graduate Engineers

TITLE: On the Use of Lined Pipes <sub>b</sub>

PERIODICAL: Khimicheskoye Mashinostroyeniye, 1960, No. 4, pp. 34 - 36

TEXT: At present steel pipes lined with vinyl plastics are produced by the Pervoural'skiy starotrubnyy zavod (Pervoural'sk Pipe Plant) and the Dnepropetrovskiy truboprokatnyy zavod im. V.I. Lenina (Dnepropetrovsk Pipe Rolling Plant imeni V.I. Lenin). The production method is based on simultaneous thermal processing of metal pipes and of prestressed plastics pipes (Refs. 1 and 4). In some cases the adhesion of the lining was defective near pipe joints and led to longitudinal displacement of the lining. The lining is elastically pressed to the metal pipe which causes a considerable friction. At normal temperatures the stress needed to push the lining out of the pipe is 220 kg. After 5 h at 60°C the lining drops out at a slight pressure. This lack of firm adhesion necessitates a careful choice of pipe joints. Figure 3 shows a pipe root before and after test. Joints excluding a dislocation of lining are shown in Figure 4 and

Card 1/4

S/184/60/C00/004/011/021  
A109/A029

### On the Use of Lined Pipes

specific construction information is given. Their common feature is the appearance of longitudinal stress in the lining at changing temperatures. Compressive stress is negligible and does not affect the shape of the lining. Tensile stress can be considerable but has no adverse effect as the safety coefficient of the lining is sufficient. At an elasticity modulus of  $E = 40,000 \text{ kg/cm}^2$  and a temperature drop of  $50^\circ\text{C}$  the relative expansion of the lining is  $0.34\%$ . Stresses were determined according to Hooke's law and are equal to  $135 \text{ kg/cm}^2$  which does not exceed the tensile strength of vinyl plastics. There are 5 figures, 1 table and 7 references: 1 English and 6 Soviet. ✓

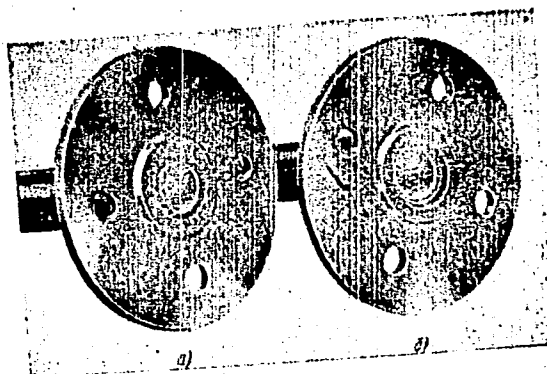
Card 2/4



S/184/60/000/004/011/021  
A109/A029

# On the Use of Lined Pipes

Figure 3. Root of a Lined Pipe:  
a - before testing; b - after  
testing with water at 70°C in the  
course of 5 h.



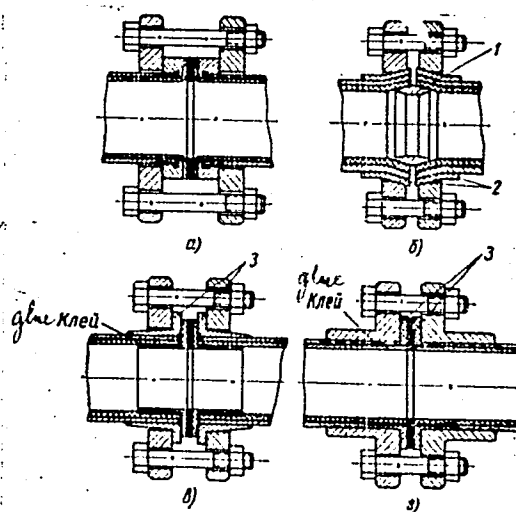
Фиг. 3. Торцы футерованной трубы:  
а — до испытания; б — после испытания водой при 70° в течение  
5 час.

Card 3/4

On the Use of Lined Pipes

S/184/60/000/004/011/021  
A109/A029

Figure 4. Types of Joints of Lined Pipes Guaranteeing Operation Reliability: 1 - lens; 2 - detachable rings; 3 - bushes made of vinyl plastics.



Фиг. 4. Типы соединений футерованных труб, обеспечивающие надежность в работе:  
1 — линза; 2 — разъемные кольца; 3 — бушсы из винилпласта.

Card 4/4



BOGOLYUBOV, V.Ye., doktor tekhn.nauk; ZHARKOV, F.P., inzh.; GUSEV, G.G., inzh.

Calculation of minimal losses in a circuit containing a ferromagnetic  
remagnetized by a charged condenser. Elektrichestvo no.9:60-61 S '65.  
(MIRA 18:1C)

1. Moskovskiy energeticheskiy institut.